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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MOONEYHAM, JANICE A

ART UNIT	PAPER NUMBER
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3629

DATE MAILED: 02/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/825,451

Applicant(s)

CHAMPERNOWNE, ARTHUR
FRANCIS

Examin r

Jan Mooneyham

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NW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is response to the applicant's communication filed on October 31, 2003, wherein:

Claims 1-36 are currently pending;

Claims 1, 2, and 13-26 have been amended.

No claims have been canceled.

No claims have been added.

Specification

The applicant has amended the abstract to more clearly disclose the applicant's invention.

The objection to the abstract is hereby *withdrawn*.

The objection under 35 U.S.C. 112, first paragraph, wherein the examiner objected to the specification not being written in full, clear, and concise term, is hereby *withdrawn* due to applicant's amendments to the specification.

Claim Rejections - 35 USC § 101

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The rejection as to **Claims 13-24** under 25 USC Section 101 is hereby *withdrawn*.

Claims 1-12 and 25-36 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

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The applicant has amended Claims 1 and 25 so as to include the technology in the preamble. However, the applicant failed to include the technology in the body of the claims.

As to technological arts recited in the preamble, mere recitation in the preamble (i.e., intended or field of use) or mere implication of employing a machine or article of manufacture to perform some or all of the recited steps does not confer statutory subject matter to an otherwise abstract idea unless there is **positive recitation in the claim** as a whole to breathe life and meaning into the preamble.

Mere intended or nominal use of a component, albeit within the technological arts, does not confer statutory subject matter to an otherwise abstract idea if the component does not apply, involve, use, or advance the underlying process.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The rejection under 25 USC 112, second paragraph is withdrawn as to Claims 13-24.

Claims 1-12 and 25-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Response to Amendment

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 3, 9, 10, 13, 15, 21,22, 25, 27, 33, and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by DeMarcken et al. (US Patent No. 6,295,521) (hereinafter referred to a DeMarcken).

Referring to Claims 1,3, and 25:

DeMarcken discloses a method and system for finding at least one best fare for a trip, the method comprising:

determining a set of partial fare solutions for the trip (Figs 1-18, col. 51 – Finding the Best Price, see line 26-29 – (partial) pricing solutions, col. 55, lines 54-56);

adding trip information to the partial fare solutions in order to define a set of complete fare solutions for the trip (Figs.19-27, col. 5, lines 1-4, see also, col. 51, lines 35-45, Fig. 3);

as trip information is added to the partial fare solutions, eliminating partial fare solutions that are non-optimal partial solutions (col. 5, lines 4-6- see also, col. 49, line 30 thru col. 50, line 39, Fig. 19, col. 2, lines 27-37); and

returning a subset of said complete fare solutions as the best fares for the trip (Fig. 19, col. 49, lines 45-59, col. 51- Finding the Best Pricing Solution).

Referring to Claims 3, 15, and 27:

DeMarcken discloses the method and system of claims 1, 13 and 25, wherein said subset of complete fare solutions is a predetermined number of lowest cost fare solutions (col. 2, lines

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31-37, col. 4, lines 30-41, see also col. 28, line 60 thru col. 29, line 3, col. 29, lines 63-67-
deferred rules, Fig. 4B, Fig. 19, it can be inferred that a subset can have a predetermined number
of lowest cost fare solutions).

Referring to Claims 9, 10, 21, 22, 33, and 34:

DeMarcken discloses the method and system of claims 1, 13 and 25 wherein said partial
fare solutions are stored in a priority queue, said complete fare solutions are retrieved from a
priority queue (col. 55-61—Enumerating Pricing Solutions).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found
in a prior Office action.

**7. Claims 2, 14, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over
DeMarcken.**

Referring to Claim 2, 14, and 26:

DeMarcken discloses the method and system of claims 1, 13, and 25, wherein adding trip
information comprises:
supplying a fare query to a root node in a solution tree (col. 7, lines 16-18, Fig. 2 (48), see also,
col. 5, lines 36-45);
assigning fare components corresponding to said root node to a plurality of
first nodes (Fig. 2, faring process (18), col. 15, lines 55-66);
assigning at least one carrier corresponding to said first nodes to a plurality of second nodes (Fig.
6, (114);

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assigning at least one flight corresponding to said second nodes to a plurality of third nodes (Fig. 2, scheduler processor (16), col. 3, lines 55-66, see also, col. 14, lines 1-6);
assigning at least one priceable unit corresponding to said third nodes to a plurality of fourth nodes (pricing solution, col. 3, lines 55-66); and
assigning at least one fare corresponding to said fourth nodes to a plurality of leaf nodes (Col. 10 – The Faring System- Fig. 19).

DeMarcken does not disclose assigning the fare components to a plurality of first nodes, at least one carrier to a plurality of second nodes, at least one flight corresponding to a plurality of third nodes, assigning at least one priceable unit to a plurality of fourth nodes, and assigning at least one fare corresponding to a plurality of leaf nodes.

However, Demarcken discloses a data structure comprising a plurality of nodes that can be logically manipulated using value functions and a graph that contains nodes that can be logically manipulated or combined to extract a plurality of pricing solutions. (col. 2, lines 38-51). It would have been obvious to ordinary skill in the art to arrange DeMarcken's method and system to include the assignment of nodes as set forth in Claim 2, 14, 26 since DeMarcken's system and method discloses a data structure comprising a plurality of nodes which can be logically manipulated or combined and this would include assigning the nodes as set forth Claims 2, 14, and 26.

8. Claims 4-8, 11,12, 16-20, 23,24, 28-32, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeMarcken as applied to claims 1, 13 and 25 above, and further in view of Sabre, Inc. (PCT WO 01/29693), (hereinafter referred to as Sabre).

Referring to Claims 4, 16 and 28:

Demarcken does not disclose the method and system of claims 1, 13 and 25, wherein said subset of complete fare solutions is an exhaustive set of said complete fare solutions.

However, Sabre discloses a method and system wherein the subset of complete fare solutions is an exhaustive set of complete far solutions (col. 2, lines 18-19, col. 3, lines 1-2, page 4, lines 17-22).

It would have been obvious to one of ordinary skill in the art to incorporate into the method and system of DeMarcken the teachings of Sabre so as to provide the lowest fare across a wide range of airlines and itineraries (page 3, lines 1-2)

Referring to Claims 5, 17, and 29:

Sabre further discloses the method and system of claims 1, 13 and 25, wherein adding trip information and eliminating partial fare solutions are performed in a recursive manner (page 9, lines 13-14, page 10, lines 2-4).

Referring to Claims 6, 18, and 30:

Sabre further discloses the method and systems of claims 1, 13, and 25, wherein adding trip information and eliminating partial fare solutions are performed in an iterative manner (page 9, lines 18-22).

Referring to Claims 7, 19, and 31:

Sabre further discloses the method and systems of claims 1, 13, and 25, wherein said partial fare solutions are eliminated based on a threshold cost (page 4, lines 17-23, page 9, lines 6-17, page 11, lines 16-18).

Referring to Claims 8, 20, and 32:

Sabre further discloses the method and system of claims 1, 13, and 25, wherein said partial fare solutions are eliminated based on a refined lower bound (page 9, line 6 thru page 12, line 11).

Referring to Claims 11, 23, and 35:

Sabre further discloses the method and system of claims 1, 13 and 25 wherein adding trip information and eliminating partial fare solutions are performed as part of a branch-and-bound best fare search routine (page 10, lines 4-10).

Referring to Claims 12, 24, and 26:

Sabre further discloses the method and system of claims 1, 13, and 25, wherein adding trip information and eliminating partial fare solutions are performed both backward and forward from a destination and origin (page 3, lines 13-18).

Response to Arguments

Applicant's arguments filed on October 31, 2003 have been fully considered but they are not persuasive.

Regarding applicant's arguments as to Claims 1, 13, and 25, applicant states that "DeMarcken et al. fails to teach determining a set of partial fare solutions," "Demarcken fails to teach adding trip information to partial fare solutions" and "DeMarcken fails to teach eliminating partial fare solutions that are non-optimal as trip information is added." The examiner respectfully disagrees with this argument. DeMarcken discloses a set of partial fare solutions (see col. 51, lines 26-29, col. 55, lines 51-63), DeMarcken discloses adding trip information to the partial fare solutions (see col. 49, lines 30-44, Fig. 3, col. 5, lines 36-45) and DeMarcken discloses eliminating partial fare solutions that are non-optimal as to trip information added (Fig. 18, Fig. 19, col. 51, lines 51-55, col. 2, lines 27-37)

As for Claims 3, 15, and 27, DeMarcken discloses that the set of pricing solutions is obtained from the server in response to a user request. Therefore, it can be inferred that the user can request a predetermined number of lowest cost fare solutions.

As for Claims 3, 9, 10, 15, 21, 22, 27, 33 and 34, the applicant argues that since the claims depend on Claims 1, 13, and 25, that DeMarcken fails to disclose each element of those dependent claims. Examiner refers the applicant to the response to applicant's arguments as to Claims 1, 13, and 25 above.

As to Claims 2, 14, and 26, applicant argues that Demarcken fails to disclose adding trip information to partial fare solutions to define complete fare solutions and that Demarcken discloses a subtractive process rather than an additive process. The examiner respectfully

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disagrees. DeMarcken teaches adding trip information into the partial fare solution and also teaches an additive process (col. 49, lines 30-44, col. 50, lines 63-66, col. 51, lines 7-45)

Regarding Claims 4-8, 11-12, 16-20, 23-24, 28-32, and 35-36, the applicant argues that these each depend from one of independent Claims 1, 13, or 25 and must be read in combination with the independent claims from which they depend. The applicant then argues that DeMarcken fails to teach or disclose the elements of these dependent claims for the reasons described with regard to Claims 1, 13, and 25. The Examiner directs the applicant to the response to applicant's arguments as to Claims 1, 13, and 25.

Regarding Claims 4, 16, and 28, the applicant argues that Sabre fails to teach that the 'subset of complete fare solutions is an exhaustive set of said complete fare solutions.' The examiner respectfully disagrees with the applicant. The motivation behind Sabre is to efficiently search for the lowest fare across a wide range of airlines and itineraries (page 3, lines 1-2). Sabre states the search technique of the present invention provides efficient searches by using a combination... thus enabling it to implicitly enumerate the search space. In this manner, a large number of possibilities can be considered without actually generating them explicitly. The examiner directs the applicant to page 4, lines 17-23. The examiner also directs the applicant to its own specification (page 13, lines 9-12, page 14, lines 11-15, See also Fig. 2 (210)). Applicant is reminded that Sabre is combined with DeMarcken. Applicant is directed to col. 51, lines 3-55 – more specifically, lines 7-12)

Regarding Claims 5, 17, and 29,

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Applicant is reminded that Claims 5, 17, and 29 depend on Claims 1, 13 and 25 which have been discussed above as to the element of adding trip information and eliminating partial fare solutions. Sabre teaches the recursive manner (page 9, lines 13-14, page 10, lines 2-4)

Regarding Claims 6, 18, and 30, applicant is reminded again that these claims depend on Claims 1, 13 and 25. Sabre teaches the iterative manner (page 9, lines 18-22)

Regarding Claims 7, 8, 11, 19, 20, 23, 31, 32 and 35, Sabre in combination with DeMarcken teach a said partial fare solution eliminated based on a threshold cost (page 4, lines 17-23, page 9, lines 6-17, page 11, lines 16-18), wherein said partial fare solutions are eliminated based on a refined lower bound (page 9, line 6 thru page 12, line 11, and wherein adding trip information and eliminating partial fare solutions are performed as part of a branch-and bound best fare search routing (page 10, lines 4-10, also, see page 11, lines 3-11)

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

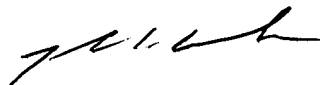
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jan Mooneyham whose telephone number is (703) 305-8554. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Weiss can be reached on (703) 308-2702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JM


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